

Appendix P

©2008 Mary Konchar



Rainbow at Harper's Meadow

Intra-Service Section 7 Biological Evaluation Form

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

[Note: This form provides the outline of information needed for consultation. If additional space is needed, attach additional sheets, or set up this form to accommodate your responses.]

Originating Person: Laurie Wunder
Telephone Number: 603-482-3415 x. 12
Date: 6/30/2008

I. Region: 5

II. Service Activity (Program) Refuges

III. Pertinent Species and Habitat:

A. Listed species and/or their critical habitat within the action area

Canada lynx- federally threatened

Gray wolf- federally endangered

There is no designated critical habitat on Lake Umbagog National Wildlife Refuge

B. Proposed species and/or proposed critical habitat within the action area

None

C. Candidate species within the action area:

None

IV. Geographic area or station name and action:

Final EIS and Comprehensive Conservation Plan (CCP) for Lake Umbagog National Wildlife Refuge

V. Location (attach map):

A. Ecoregion Number and Name:

Laurentian Mixed Forest Province;
2114; Northern Hardwoods-Spruce Forest Section (R.G. Bailey,
Ecoregions of the United States, 1976)

B. County and State:

Coos Co., NH and Oxford Co. Maine

C. Section, township, and range (or latitude and longitude):

Varies; refuge headquarters is in vicinity of 44°49'; 71°04'

D. Distance (miles) and direction to nearest town:

Varies; refuge headquarters is 5.5 miles north of Errol, NH

E. Species/habitat occurrence:

Western Maine, including the Umbagog region historically supported lynx populations (Hoving, C. L., R. A. Joseph, and W. B. Krohn. 2003. Recent and historical distributions of Canada lynx in Maine and the Northeast. *Northeastern Naturalist* 10(4):363-382.) Lynx were distributed throughout western Maine and New Hampshire in the 1800s and locally abundant at certain times. For example, Joshua Rich, a trapper-naturalist from western Maine wrote that lynx were common in that area in the mid-1800s. In 1843 he trapped 49 in one winter near Richardson Lake. Lynx were extirpated from southwestern Maine by 1912. Lynx were regularly found in the White Mountains of New Hampshire through 1960 (e.g. 216 lynx were bountied in New Hampshire 1931-1953). About 1900 bobcats began to appear for the first time in western Maine at the same time that lynx began to decline. Throughout their range, bobcats generally exclude lynx, although the exact mechanism of competition between the species is not known. Climate change resulted in lower snow depths, which may have given bobcats a competitive advantage in western Maine and northern New Hampshire. The range expansion of bobcats coincided with the extirpation of wolves and caribou from the region and the increase in deer populations. Even in deep snow habitats bobcats could survive by killing deer and consuming carrion in deer wintering areas. Litvaitis and Harrison (1989) hypothesized that when coyotes became abundant in the region in the 1970s, bobcats switched to snowshoe hare as a primary food leading to a decline in bobcat populations in some parts of Maine.

Today, lynx are uncommon in western Maine, although in 2008 winter snow track surveys Maine Inland Fisheries and Wildlife found multiple lynx (likely mother and kittens) about 20 miles north of Umbagog NWR. Although there may be occasional lynx occurrence and reproduction in western Maine, especially during periods of high lynx populations in northern Maine, snow depth and the presence of bobcats are detriments to their persistence. Current lynx habitat models (Hoving, C. L., D. J. Harrison, W. B.

Krohn, W. J. Jakubas, and M. A. McCollough. 2004. Canada lynx *Lynx Canadensis* habitat and forest succession in northern Maine. *Wildlife Biology* 10(4):53-61.) and Robinson L. 2006. Ecological relationships among partial harvesting, vegetation, snowshoe hares and Canada lynx in Maine. M. S. Thesis. University of Maine, Orono, Maine. 184pp.) predict western Maine and the Umbagog region to have a low probability of lynx occurrence.

There are no known confirmed occurrences of either Canada lynx or gray wolf on the refuge or in the proposed expansion area. The refuge has carried out several years of winter survey work for lynx, including using baited camera stations and snow-tracking, without any confirmed detections (one possible track observed on the Maine side of the refuge in 2008 was too old to be positively identified). Lynx have been confirmed approximately 10 miles away in Magalloway Plantation, Maine. These occurrences are likely to be individuals dispersing from their breeding areas, since the nearest consistent confirmed breeding location in Maine is approximately 90 miles from the refuge in the Moosehead Lake region (MDIFW). In New Hampshire, researchers discovered a lynx track in January 2006 along Route 2 in the town of Jefferson, approximately 45 miles southeast of the refuge. In 2007-2008 a lynx was shot and lynx tracks were observed in Vermont for the first time in several decades. Radio-tagged lynx from northwestern Maine have traveled hundreds of miles within the state and have dispersed north of Vermont and into the Gaspé Peninsula of Quebec. Thus, it could be expected that an occasional lynx would disperse through the Umbagog Region.

In Maine, lynx use spruce-fir dominated regenerating stands that develop 15 to 30 years after forest disturbance. Approximately 2000 acres under current refuge fee ownership are spruce-fir. An additional approximately 17,000 acres of spruce-fir are proposed for acquisition in fee under the CCP. Much of this spruce-fir is either not in the appropriate age class for lynx, or is fragmented into small, dispersed blocks. It is unlikely that lynx would become resident given current snow and ecological conditions. Other early-successional wildlife (bobcats, moose, bear, woodcock, chestnut sided warblers) may benefit from this management.

The nearest confirmed wolf population is approximately 200 miles to the north, north of the St. Lawrence River in Quebec. In 2002, a confirmed wolf was killed about 20 miles north of the New Hampshire-Quebec border, near Sainte Marguerite-de-Lingwick, Quebec, Canada. Gray wolves have fairly generalized habitat requirements and northern New Hampshire, including the area of the refuge, probably provides some suitable wolf habitat with adequate prey populations.

Description of proposed action (attach additional pages as needed):

Lake Umbagog National Wildlife Refuge is in the process of completing their Final EIS and Comprehensive Conservation Plan. The proposed actions and alternative selected by the Service are described in Chapter 2 of the FEIS and CCP. The proposed actions

include timber harvest for wildlife management purposes and a proposed land expansion of approximately 48,000 acres, (56% in fee and 44% in easement) (see appendix A and K, of the FEIS and CCP). The refuge is also currently open to hunting of all state huntable species, with the exception of bobcat and turkey, according to Maine, New Hampshire, federal, and refuge-specific regulations. The refuge was initially opened to hunting in 2000. The 2000 Refuge Hunt Plan and EA were amended in 2007. A Finding of No Significant Impact was issued at that time. Although the refuge is currently closed to all trapping and to the hunting of bobcat and turkey, we are proposing to open to bobcat and turkey hunting, and to trapping, with additional NEPA analysis, (including additional, separate Section 7 consultation), and public comment, following the completion of the CCP. The CCP also proposes to permit snowmobiling and certain other types of public recreation on designated trails both within the current refuge boundary and in the expansion area

In addition to protecting the integrity and diversity of our wetlands and Umbagog Lake, the CCP strives to promote and sustain a mixed forest system, while increasing the conifer component of our upland forests. We are proposing to manage for a mix of regeneration, mid- and mature age classes, using primarily uneven-aged management to convert existing even-aged stands to a multi-aged, multi-structured condition. We will also retain snags, downed wood, and super-canopy trees. Even-aged management techniques may also be used in certain stands, such as in woodcock management areas and deer wintering areas. Some stand improvement or thinning operations may be used in some stands. All forest practices will follow best management practices as recommended in Flatebo et al. (1999), "Biodiversity in the Forests of Maine" and New Hampshire Forest Sustainability Standards Work Team, (1997), "Good Forestry in the Granite State". In a general way, our proposed management will, in addition to increasing the proportion of spruce-fir in our stands, move our forests to a more mature, closed- canopy condition. We have identified about 4,000 acres of upland forest that are suitable for forest management over the course of the 15 year life of this CCP. We anticipate that most of the lands identified for possible acquisition in the expansion proposal will have been harvested prior to acquisition, and that we will be doing little or no significant timber harvest in those areas, as a result. The CCP Land Protection Plan is focused on lands around significant wetlands and drainages, and strives to provide connectivity with surrounding conserved lands.

Uneven-aged management will create habitat beneficial to focus species that require mature conifer forest, but will not provide foraging habitat for the Canada lynx. However, it is unlikely that lynx are resident or will be in the future, and the proposed forest management will not adversely affect this threatened species.

Determination of effects:

- A. Explanation of effects of the action on species and critical habitats in items III.A, B, and C (attach additional pages as needed):**

The refuge is near the southern edge of the core range for lynx and lacks large blocks of appropriate lynx habitat. It is also far from known breeding populations of lynx or wolf and probably only provides habitat for the occasional dispersing individual. There have been no confirmed occurrences of either species on the refuge, and therefore the management activities proposed in the CCP are unlikely to significantly affect either species. Although the CCP does not specifically emphasize the creation of lynx or wolf habitat, proposed forest management activities favor the development of mature spruce-fir stands, with retention of coarse woody debris. This type of management is likely to improve the development of denning habitat for lynx, as well as habitat for red squirrels, a secondary prey species. Refuge management activities that create a range of age classes on the landscape and that promote understory development, will likely provide some, but very limited, foraging habitat, as well. Proposed thinning or other stand improvement activities could reduce habitat for snowshoe hare and thus for lynx, but are likely to be fairly limited in scope. Neither prescribed burning nor timber salvage, both activities likely to reduce lynx denning habitat, are being proposed. Management of deer wintering areas is likely to improve the prey base for wolves. Overall, the existing refuge fee and proposed expansion area acreages are probably too small to support a self-sustaining population of lynx or wolves, without immigration from 'source' areas. It is more likely that the refuge will serve to provide valuable connectivity and dispersal corridors between neighboring patches of habitat. In a general way, the refuge Land Protection Plan and proposed forest management practices will probably benefit lynx and wolves by insuring that the landscape remains in a predominantly forested condition, promoting spruce-fir, preventing conversion to development, creating larger continuous blocks of forest on the landscape, and providing connectivity to other conserved blocks of forested habitat. Protections afforded riparian corridors and wetlands, as well as forested ridge-tops, will also facilitate movements between habitat patches for both species.

Snowmobiling, dog-sledding, and other recreational activities proposed in the CCP, have the potential of disturbing lynx. Snow compaction created by snowmobile trails and winter pedestrian travel may also provide an avenue for other competing predators (such as coyotes or bobcat) to gain access to lynx habitat. However, snowmobiling will be limited to designated trails and the location of trails will be adjusted in the event any wildlife resources, including lynx or wolves become a concern. There will also be no net increase in the number of designated snowmobile trails or roads open to vehicular traffic on the refuge, or in the expansion area, as a result of this CCP. ATVs are not permitted on the refuge. The refuge is only proposing a limited number of pedestrian trails and most of these do not traverse large blocks of coniferous habitat. Most recreational activity on the refuge, with the possible exception of hunting, is concentrated on the lakes and rivers, rather than in the uplands. Hunting has occurred on the refuge for many years with no known adverse effects on either lynx or wolves.

B. Explanation of actions to be implemented to reduce adverse effects:

We will continue to survey for lynx using winter snow-tracking on a periodic basis.

Should breeding lynx or wolves be detected, we will modify our management actions as appropriate, including, if necessary, re-locating trails near potential den sites and/ or foraging areas, providing educational outreach to hunters on lynx and wolves, limiting or modifying thinning operations, modifying the refuge roads plan, and coordinating management with adjacent landowners.

If you have any questions about this review, please contact Mark McCollough, Endangered Species Biologist, Maine Field Office at 207 827-5938 x 12.

VIII. Effect determination and response requested: [* optional]

A. Listed species/critical habitat:

<u>Determination</u>	<u>Response requested</u>
no effect (species: _____)	___*Concurrence
is not likely to adversely affect (species: ___ Canada lynx, gray wolf _____)	<u>X</u> Concurrence ___*Formal Consultation
is likely to adversely affect (species: _____)	___ Formal consultation

B. Proposed species/proposed critical habitat:

<u>Determination</u>	<u>Response requested</u>
no effect (species: _____)	___*Concurrence
is not likely to adversely affect (species: _____)	___ Concurrence
is likely to adversely affect (species: _____)	___ Informal conference
is likely to jeopardize/adverse modification of critical habitat (species: _____)	___ Conference

C. Candidate species:

Determination

Response requested

no effect

(species: _____)

___*Concurrence

is likely to jeopardize

(species: _____)

___Conference



Lori Nordstrom
Supervisor, Maine Field Office

8/11/08

date

Lake Umbagog National Wildlife Refuge
P.O. Box 240
Route 16 North
Errol, NH 03579-0240
E-Mail: lakeumbagog@fws.gov
Phone: 603/482-3415

<http://lakeumbagog.fws.gov>

Federal Relay Service
for the deaf or hard of hearing
1800/877 8339

U.S. Fish and Wildlife Service Website
<http://www.fws.gov>

For National Wildlife Refuge System Information:
1800/344 WILD

November 2008

